

# Mineral Industry Surveys

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## SULFUR IN DECEMBER 2006

During the month, production of recovered elemental sulfur was 742,000 metric tons (t), according to the U.S. Geological Survey. December 2006 production was 6% higher than that of November 2006 and 3% higher than that of December 2005. Shipments were 4% higher than those of November 2006. Producers' ending stocks for December 2006 were 219,000 t.

Import and export data for December 2006 were not available at the time of publication and will be published in the Sulfur in January 2007 Mineral Industry Surveys along with apparent

consumption. Imports of recovered sulfur for November 2006 were estimated to be 198,000 t; exports were 48,000 t. Imports of sulfuric acid for November 2006 were 154,000 t; exports were 9,000 t.

Significant adjustments have been made to the sulfur import data. Reports from the U.S. Census Bureau appear to underreport sulfur imports, especially material from Canada. The revised figures are based on Census information and data from personal communications with industry experts.

TABLE 1  
SALIENT SULFUR STATISTICS<sup>1</sup>

(Thousand metric tons)

Period	Production			Shipments, all sources	Ending stocks <sup>3</sup>
	Petroleum <sup>2</sup>	Natural gas	Total		
2005:					
January-December	6,940	1,850 <sup>r</sup>	8,790 <sup>r</sup>	8,770 <sup>r</sup>	XX
December	593	125 <sup>r</sup>	718 <sup>r</sup>	725 <sup>r</sup>	157 <sup>r</sup>
2006:					
January	572	118 <sup>r</sup>	690 <sup>r</sup>	682 <sup>r</sup>	162 <sup>r</sup>
February	513	116 <sup>r</sup>	628 <sup>r</sup>	635 <sup>r</sup>	152 <sup>r</sup>
March	544	121 <sup>r</sup>	665 <sup>r</sup>	669 <sup>r</sup>	145 <sup>r</sup>
April	546	124 <sup>r</sup>	670 <sup>r</sup>	652 <sup>r</sup>	163 <sup>r</sup>
May	591	123 <sup>r</sup>	714 <sup>r</sup>	705 <sup>r</sup>	164
June	586	99 <sup>r</sup>	685 <sup>r</sup>	697 <sup>r</sup>	149
July	600	119 <sup>r</sup>	719 <sup>r</sup>	695	172
August	618	122 <sup>r</sup>	740 <sup>r</sup>	726 <sup>r</sup>	184 <sup>r</sup>
September	597	112 <sup>r</sup>	710 <sup>r</sup>	726 <sup>r</sup>	168
October	594 <sup>r</sup>	127 <sup>r</sup>	720 <sup>r</sup>	692 <sup>r</sup>	196
November <sup>r</sup>	573	124	698	690	203
December <sup>p</sup>	620	122	742	719	219
Total	6,960	1,430	8,380	8,290	XX

<sup>p</sup>Preliminary. <sup>r</sup>Revised. XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes a small quantity from coking operations.

<sup>3</sup>Subject to inventory adjustments.

TABLE 2  
U.S. IMPORTS OF SULFUR<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada		Mexico		Venezuela		Total, all countries <sup>2</sup>	
	Quantity <sup>e</sup>	Value <sup>3</sup>	Quantity	Value <sup>3</sup>	Quantity <sup>e</sup>	Value <sup>3</sup>	Quantity <sup>e</sup>	Value <sup>3</sup>
2005:								
January-December	1,970	33,500	427	18,600	409	16,800	2,820	70,500
January-November	1,790	29,200	393	16,700	368	14,600	2,560	62,000
November	180	3,680	29	1,130	20	819	233	5,710
December	185	4,360	34	1,890	41	2,180	261	8,500
2006:								
January	165	4,190	58	2,520	37	1,680	260	8,460
February	150	3,910	43	1,810	40	1,650	233	7,450
March	165	3,970	44	2,010	34	1,580	243	7,690
April	205	4,290	29	1,420	30	1,410	264	7,230
May	210	3,260	29	1,390	19	925	259	5,820
June	205	2,550	44	1,970	29	1,270	281	6,120
July	165	2,370	43	1,900	33	1,370	241	5,730
August	165	2,330	43	1,770	20	824	229	4,940
September	160	1,970	43	1,730	31	1,240	245	4,970
October	170 <sup>r</sup>	1,960	43	1,710	32	1,270	246 <sup>r</sup>	4,990
November	165	1,210	14	577	18	725	198	2,620
Total	1,930	32,000	435	18,800	324	13,900	2,700	66,000

<sup>e</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

Sources: U.S. Census Bureau data as adjusted by U.S. Geological Survey and PentaSul North America Sulphur Service.

TABLE 3  
U.S. IMPORTS OF SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada			Mexico			Total, all countries <sup>2</sup>		
	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>
2005:									
January-December	2,000	656	80,700	398	129	7,920	2,660	871	102,000
January-November	1,830	600	72,800	370	120	7,420	2,430	796	92,700
November	138	45	5,910	38	12	674	181	59	6,820
December	172	56	7,910	28	9	504	229	75	9,640
2006:									
January	194	63	7,800	16	5	444	244	80	9,030
February	161	53	6,550	23	7	416	201	66	7,670
March	198	65	7,760	19	6	454	255	83	9,050
April	207	68	7,910	16	5	400	234	77	9,100
May	207	68	7,840	13	4	307	229	75	8,320
June	189	62	7,030	2	1	56	208	68	7,860
July	181	59	6,290	7	2	157	228	74	6,900
August	212	69	7,330	22	7	624	245	80	8,070
September	178	58	6,850	23	8	557	201	66	7,490
October	93	30	4,650	19	6	464	122	40	5,320
November	93	31	5,440	21	7	512	154	50	6,740
Total	1,910	626	75,500	181	59	4,390	2,320	759	85,500

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

Source: U.S. Census Bureau.

TABLE 4  
U.S. EXPORTS OF SULFUR AND SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Sulfur		Sulfuric acid		
	Quantity	Value <sup>2</sup>	Quantity	Sulfur content	Value <sup>2</sup>
2005:					
January-December	683	55,900	348	108	29,500
January-November	596	50,200	311	96	26,900
November	14	2,940	7	2	992
December	87	5,790	37	12	2,560
2006:					
January	55	4,430	14	4	1,400
February	15	1,900	38	12	2,400
March	68	4,710	23	8	2,000
April	11	1,270	19	6	1,600
May	19	2,090	17	5	1,400
June	141	8,790	11	4	1,370
July	79	4,540	18	6	2,030
August	15	2,380	37	12	2,280
September	15	1,540	11	4	1,320
October	84	4,910	20	6	1,730
November	48	2,980	9	3	1,040
Total	550	39,500	216	71	18,600

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Declared f.a.s. (free alongside ship) valuation.

Source: U.S. Census Bureau.

TABLE 5  
U.S. CONSUMPTION OF SULFUR<sup>1</sup>

(Thousand metric tons)

Period	Domestic sources <sup>2</sup>	Imports <sup>c</sup>	Consumption
2005:			
January-December	8,080 <sup>r</sup>	2,820	10,900
January-November	7,450	2,560	10,000
November	662 <sup>r</sup>	233	895 <sup>r</sup>
December	638 <sup>r</sup>	261	899 <sup>r</sup>
2006:			
January	627 <sup>r</sup>	260	887 <sup>r</sup>
February	620 <sup>r</sup>	233	853 <sup>r</sup>
March	601 <sup>r</sup>	243	844 <sup>r</sup>
April	641 <sup>r</sup>	264	905 <sup>r</sup>
May	686 <sup>r</sup>	259	945 <sup>r</sup>
June	556 <sup>r</sup>	281	837 <sup>r</sup>
July	616	241	857
August	711 <sup>r</sup>	229	940 <sup>r</sup>
September	711 <sup>r</sup>	245	956 <sup>r</sup>
October <sup>f</sup>	608	246	854
November	642	198	840
Total	7,020	2,700	9,720

<sup>c</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Calculated as shipments minus exports.

TABLE 6  
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,  
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT<sup>1</sup>

(Thousand metric tons)

District and source	December 2006 <sup>p</sup>		November 2006		January - December 2006 <sup>2</sup>		January - December 2005 <sup>2</sup>	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	19	18	18	17	229	227	234	235
Natural gas	7	7	8	7	42	42	19	18
Total	26	25	26	24	271	268	253	253
PAD 2:								
Petroleum and coke	86	85	83	84	1,030	1,030	1,040 <sup>r</sup>	1,040 <sup>r</sup>
Natural gas	3	4	3	3	40	40	36	36
Total	89	89	86	87	1,070	1,070	1,070 <sup>r</sup>	1,070 <sup>r</sup>
PAD 3: <sup>3</sup>								
Petroleum and coke	402	396	359	359	4,330	4,290	4,320	4,330
Natural gas	38	34	41 <sup>r</sup>	41 <sup>r</sup>	483	484	533 <sup>r</sup>	534 <sup>r</sup>
Total	440	430	400 <sup>r</sup>	400 <sup>r</sup>	4,820	4,780	4,850 <sup>r</sup>	4,860 <sup>r</sup>
PAD 4 and 5: <sup>4</sup>								
Petroleum and coke	114	102	114	112 <sup>r</sup>	1,370	1,310	1,350	1,310
Natural gas	73	73	72 <sup>r</sup>	67 <sup>r</sup>	861	859	1,260 <sup>r</sup>	1,270 <sup>r</sup>
California	95	84	95	92	1,130	1,090	1,080	1,040
Total	187	175	186 <sup>r</sup>	179 <sup>r</sup>	2,230	2,170	2,610 <sup>r</sup>	2,580 <sup>r</sup>
Grand total	742	719	698 <sup>r</sup>	690 <sup>r</sup>	8,380	8,290	8,790 <sup>r</sup>	8,770 <sup>r</sup>

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions.

<sup>3</sup>Includes the U.S. Virgin Islands.

<sup>4</sup>Quantities produced and shipped in California included in petroleum and natural gas. California total shown for information purposes only.

TABLE 7  
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS<sup>1</sup>

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

	2006			2005
	December	November	Total	total
Production	8.74 <sup>p</sup>	8.49 <sup>r</sup>	8.38	8.79 <sup>r</sup>
Shipments	8.47 <sup>p</sup>	8.40 <sup>r</sup>	8.29	8.77 <sup>r</sup>
Exports of sulfur	NA	0.58	0.60	0.58
Imports of sulfur:				
Canada	NA	2.01 <sup>e</sup>	2.10 <sup>e</sup>	1.97 <sup>e</sup>
Mexico	NA	0.17	0.48	0.45
Venezuela	NA	0.22 <sup>e</sup>	0.35 <sup>e</sup>	0.41 <sup>e</sup>
Total <sup>2</sup>	NA	2.41 <sup>e</sup>	2.95 <sup>e</sup>	2.79 <sup>e</sup>
Exports of H <sub>2</sub> SO <sub>4</sub>	NA	0.11	0.24	0.31
Imports of H <sub>2</sub> SO <sub>4</sub> :				
Canada	NA	1.13	2.09	1.87
Mexico	NA	0.26	0.20	0.40
Total <sup>2</sup>	NA	1.87	2.54	2.66
Consumption: <sup>3</sup>				
Domestic sources	NA	7.81	7.67	8.06
Imports	NA	2.41 <sup>e</sup>	2.95 <sup>e</sup>	2.79 <sup>e</sup>
Total	NA	10.22	10.62	10.85
Sulfur export values <sup>4</sup>	NA	62	72	84
Sulfur import values: <sup>4</sup>				
Canada	NA	7	17	17
Mexico	NA	41	43	41
Venezuela	NA	40	43	41
Average <sup>2</sup>	NA	13	24	25
H <sub>2</sub> SO <sub>4</sub> export values <sup>4</sup>	NA	116	86	86
H <sub>2</sub> SO <sub>4</sub> import values: <sup>4</sup>				
Canada	NA	58	39	40
Mexico	NA	24	24	20
Average <sup>2</sup>	NA	44	37	37

<sup>e</sup>Estimated. <sup>p</sup>Preliminary. <sup>r</sup>Revised. NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes other countries not listed.

<sup>3</sup>Because December trade data were not available, December consumption was not determined.

<sup>4</sup>Average value per ton for most recent data available.